

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method ~~for~~ of predicting motion vectors associated with ~~blocks~~ a block of pixels of a picture to be included in a data stream for differential motion vector coding of a video signal, said method comprising the steps of :

a) organising a set of reference pictures ~~into~~ ~~in to~~ a pair of lists and according to each reference picture within said lists at least one reference index ~~[[,]]~~ ;

b) associating with selected ones of said blocks in said video signal at least one motion vector that references a respective one of said lists, ~~with~~ each vector associated with a selected one of the blocks referencing a different list ~~of said lists~~ , each vector defining disposition of which vectors defines disposition of said selected one of the blocks ~~block~~ relative to a reference picture in the respective one of said lists ~~—, and —~~ ; and,

e) computing a predicted value for a current vector ~~each~~ of said vectors ~~for a current block~~ from vectors of adjacent blocks referencing ~~a~~ ~~the~~ same list of reference pictures as the current vector ~~being computed —, whereby , the wherein~~ prediction of a motion vector that selects a reference picture using a first ~~certain~~ list of reference pictures is not dependent upon the motion vectors whose reference pictures are selected using a second ~~the other~~ list of reference pictures.

2. (Currently Amended) The method of claim 1 wherein said computing uses ~~computation~~ utilises the values of spatially neighbouring motion vectors that use the same list of reference pictures as the motion current vector ~~being predicted~~, regardless of the relative temporal direction of the reference pictures selected for the current vector and neighbouring motion vectors.

3. (Currently Amended) ~~The method of claim 1~~ ~~A method according to claim 1,~~ wherein the ~~motion compensation-based video coder~~ motion vector coding supports a plurality of block partition sizes for performing motion compensation.

4. (Currently Amended) The method of claim 3 ~~A method of motion vector prediction according to claim 3,~~ wherein the block partition sizes ~~for motion compensation~~ include partitions of 16x16, 16x8, 8x16, 8x8, 8x4, 4x8, and 4x4 luminance samples.

5. (Currently Amended) The method of claim 1 ~~A method according to claim 1,~~ wherein said motion vectors may be computed using one of a plurality of predefined computation strategies.

6. (Currently Amended) The method of claim 5 ~~A method according to claim 5,~~ wherein a first strategy of said strategies uses ~~utilises~~ a motion vector from a single neighbouring block that uses the same list as the motion current vector ~~being predicted~~ .

7. (Currently Amended) The method of claim 6 ~~A method according to claim 6,~~ wherein said first strategy is applied only when the a block partition size of the current block for which the motion current vector ~~is being predicted~~ is 16x8 or 8x16 luminance samples.

8. (Currently Amended) The method of claim 7 ~~A method of motion vector prediction according to claim 7,~~ wherein if the current motion vector applies to a the top half of a 16x8 partitioned macroblock and a the block immediately above the current block in the picture contains a motion vector that uses the same reference picture list and reference index as the current motion vector, the ~~predicted motion~~ current vector is set equal to the motion vector ~~value~~ that uses the same reference picture list in the block immediately above.

9. (Currently Amended) The method of claim 7 ~~A method of motion vector prediction according to claim 7,~~ wherein if the current motion vector applies to a the bottom half of a 16x8 partitioned macroblock and a the block immediately left of the current block contains a motion vector that uses the same reference picture list and reference index as the current motion vector, the ~~predicted motion~~ current vector is set equal to the motion vector ~~value~~ that uses the same reference picture list in the block immediately left of the current block.

10. (Currently Amended) The method of claim 7 ~~A method of motion vector prediction according to claim 7,~~ wherein if the current ~~motion~~ vector applies to a ~~the~~ left half of an 8x16 partitioned macroblock and a ~~the~~ block immediately left contains a ~~motion~~ vector that uses the same reference picture list and reference index as the current ~~motion~~ vector, the ~~predicted motion current~~ vector is set equal to the ~~motion~~ vector ~~value~~ that uses the same reference picture list in the block immediately left.

11. (Currently Amended) The method of claim 7 ~~A method of motion vector prediction according to claim 7,~~ wherein if the current ~~motion~~ vector applies to a ~~the~~ right half of an 8x16 partitioned macroblock, and a ~~the~~ block above and to the right of the current block is available, and the above and to the right ~~above-right~~ block contains a ~~motion~~ vector that uses the same reference picture list and reference index as the current ~~motion~~ vector, the ~~predicted motion current~~ vector is set equal to the ~~motion~~ vector ~~value~~ that uses the same reference picture list in the block above and to the right of the current block.

12. (Currently Amended) The method of claim 7 ~~method of motion vector prediction according to claim 7,~~ wherein if the current ~~motion~~ vector applies to a ~~the~~ right half of an 8x16 partitioned macroblock, and a ~~the~~ block immediately above and to the right is not available but a ~~the~~ block above and to the left is available, and the block above and to the left contains a ~~motion~~ vector that uses the same reference picture list and reference index as the current ~~motion~~ vector, the ~~predicted motion current~~ vector is set equal to the ~~motion~~ vector ~~value~~ that uses the same reference picture list in the block above and to the left.

13. (Currently Amended) The method of claim 5 ~~A method of motion vector prediction according to claim 5,~~ wherein a second ~~computation~~ strategy selects ~~motion~~ vectors from up to three neighbouring blocks.

14. (Currently Amended) The method of claim 13 ~~A method according to claim 13~~ wherein said three neighbouring blocks are a ~~the~~ block to the left of the current block, a ~~the~~ block above the current block, and a ~~the~~ block above and to the right of the current block.

15. (Currently Amended) The method of claim 14 ~~A method according to claim 14~~ wherein if the block above and to the right is not available then the block above and to the left is used, if available.

16. (Currently Amended) The method of claim 13 ~~A method of motion vector prediction according to claim 13,~~ wherein if no ~~motion~~ vector using the same reference picture list is available in one of said three neighbouring blocks, a zero-valued motion vector, (0,0), is used in place of ~~the motion~~ a vector from ~~that block~~ one of said three neighbouring blocks .

17. (Currently Amended) The method of claim 13 ~~A method of motion vector prediction according to claim 13,~~ wherein ~~if in the case that the~~ blocks above, above and to the left, and above and to the right of the current block are not available within a ~~the~~ same picture or slice as the current block, and a ~~the~~ block to the left of the current block is available, ~~a predicted motion~~ the current vector is set equal to a ~~the motion~~ vector used for the block to the left of the current block ~~is utilized~~ .

18. (Currently Amended) The method of claim 13 wherein ~~A method of motion vector prediction according to claim 13, wherein,~~ if a ~~the~~ left block is an ~~the~~ only available block of the three ~~3~~ selected neighbouring blocks, and if one and only one of the three ~~selected~~ neighbouring blocks contains a ~~motion~~ vector that uses the same reference picture list as the current block being predicted and uses a reference index equal to the reference index used for the current block, the ~~predicted motion~~ current vector is set equal to the value of said ~~motion~~ vector.

19. (Currently Amended) The method of claim 13 ~~A method of motion vector prediction according to claim 13~~ wherein if the ~~predicted motion~~ current vector has not been computed according to the conditions of either of claims 17 or claim 18 then the ~~predicted motion~~ current vector is computed by taking a component-wise median of ~~the 3~~ three neighbouring ~~motion~~ vectors.

20. (Currently Amended) The method of claim 19 ~~A method of motion vector prediction according to claim 19,~~ wherein if no ~~motion~~ vector using the same reference picture list is available in one of said three neighbouring blocks, a zero-valued motion vector, (0,0), is used in place of ~~the motion~~ a vector from ~~that block~~ one of said three neighbouring blocks .